IN THE CLAIMS:

1. (Currently amended) A semiconductor device comprising:

a gate electrode formed on a semiconductor substrate with a gate insulating film interposed therebetween;

a channel region composed of a first-conductivity-type impurity layer formed in a region of a surface portion of the semiconductor substrate located below the gate electrode;

source/drain regions composed of second-conductivity-type impurity layers formed in regions of the surface portion of the semiconductor substrate located on both sides of the gate electrode;

second-conductivity-type extension regions formed between the channel region and respective upper portions of the source/drain regions in contact relation with the source/drain regions; and

first-conductivity-type pocket regions doped with indium ions, and formed between the channel region and respective lower portions of the source/drain regions ~~in contact relation with the source/drain regions and in spaced relation to the gate insulating film.~~, such that the first-conductivity-type pocket regions are in contact with the source/drain regions and in no contact with the gate insulating film.

2. (Original) The semiconductor device of claim 1, wherein a dose of the indium ions in the pocket regions is 5×10^{13} cm^{-2} or less.

3. (Original) The semiconductor device of claim 1, wherein a dose of the indium ions in the pocket regions is between 1×10^{13} cm- and 5×10^{13} cm^{-2}.

4. (Original) The semiconductor device of claim 1, wherein a dose of the impurity ions in the channel region is between 4×10^{12} cm^{-2} and 1×10^{13} cm^{-2}.

5. (Original) The semiconductor device of claim 1, further comprising a first-conductivity-type well region formed in the semiconductor substrate,

wherein the channel region is formed in the surface region of the semiconductor substrate and over the well region, and has an impurity ions concentration higher than the impurity ions concentration of the well region.

6. (Original) The semiconductor device of claim 1, wherein the channel region is composed of boron ions or indium ions.

7. (Currently amended) A semiconductor device comprising:

a gate electrode formed on a semiconductor substrate with a gate insulating film interposed therebetween;

a channel region composed of a first-conductivity-type impurity layer formed in a region of a surface portion of the semiconductor substrate located below the gate electrode;

source/drain regions composed of second-conductivity-type impurity layers formed in regions of the surface portion of the semiconductor substrate located on both sides of the gate electrode;

second-conductivity-type extension regions formed between the channel region and respective upper portions of the source/ drain regions in contact ~~relation~~ with the source/drain regions;

first-conductivity-type pocket regions formed between the channel region and respective lower portions of the source/drain regions in contact ~~relation~~ with the source/drain regions and ~~in~~ spaced ~~relation to~~ apart from the gate insulating film; and

first-conductivity-type lightly doped channel regions formed in both side portions of the channel region in contact ~~relation~~ with the extension regions, each of the lightly doped channel regions containing an activated impurity at a concentration lower than in a center portion of the channel region.

8. (Original) The semiconductor device of claim 7, wherein the channel region contains indium ions.

9. (Currently amended) A semiconductor device comprising:

a gate electrode formed on a semiconductor substrate with a gate insulating film interposed therebetween;

a channel region composed of a first-conductivity-type impurity layer doped with indium ions and formed in a region of a surface portion of the semiconductor substrate located below the gate electrode;

source/drain regions composed of second-conductivity-type impurity layers formed in regions of the surface portion of the semiconductor substrate located on both sides of the gate electrode;

second-conductivity-type extension regions formed between the channel region and respective upper portions of the source/drain regions in contact ~~relation~~ with the source/drain regions; and

first-conductivity-type lightly doped channel regions formed in both side portions of the channel region in contact ~~relation~~ with the extension regions, each of the lightly doped channel regions containing an activated impurity at a concentration lower than in a center portion of the channel region.